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ABSTRACT

Teacher educators everywhere are examining programs and delivery modes as a result of a decade of studies and commissions on the reform of teacher education. However, for teacher education policy makers in settings like Mauritius there are two special issues to be considered in the examination of the teacher education process. The first relates to the critical decisions that have to be made regarding allocation of scarce resources to education and the fight that teacher education has for a share of these resources. The second relates to shortage of trained teachers and the concomitant struggle to address both quality and quantity in the teacher education program. In this paper, the author examines the concept of teacher growth and how models of teacher growth can help facilitate a rapprochement between quality and quantity in teacher education programs during times of teacher shortages in places like Mauritius. The questions posed in the Ministry of Education Country Paper provides a framework for suggestions regarding teacher education in Mauritius. (Author)

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TEACHER EDUCATION AND TEACHER SHORTAGES:
THE CONFLICT BETWEEN QUALITY AND GROWTH
IN TEACHER EDUCATION IN DEVELOPING SETTINGS

Paper Prepared for the
Ministry of Education Sponsored Symposium
on Higher Education in Mauritius
Mauritius, April 3-7, 1989

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ABSTRACT

Teacher educators everywhere are examining programs and delivery modes as a result of a decade of studies and commissions on the reform of teacher education. However, for teacher education policy makers in settings like Mauritius there are two special issues to be considered in the examination of the teacher education process. The first relates to the critical decisions that have to be made regarding allocation of scarce resources to education and the fight that teacher education has for a share of these resources. The second relates to shortage of trained teachers and the concomitant struggle to address both quality and quantity in the teacher education program. In this paper, the author examines the concept of teacher growth and how models of teacher growth can help facilitate a rapprochement between quality and quantity in teacher education programs during times of teacher shortages in places like Mauritius. The questions posed in the Ministry of Education 'Country Paper' provides a framework for suggestions regarding teacher education in Mauritius.

INTRODUCTION

I am most honoured to have been given the opportunity to participate in the current symposium on Education in Mauritius. After having been involved in the examination of educational issues in a number of contexts, both nationally and internationally, I have come to two (perhaps more, but these two seem relevant to the current discussion) conclusions about the process.

First, the really hard part in a process like this is coming to some consensus on what the questions are that need to be answered. This is, of course, paramount in any data gathering activity, but more so when discussing educational issues. After having read the country paper sent to me I am impressed that planners in Mauritius have been able to identify so clearly the issues and the questions. One ploy of speakers like myself when asked to comment on controversial educational issues is to finish with a series of questions in the area and the admonishment for the audience to address these questions in order to find appropriate solutions. With the country paper, the planners of the symposium have taken that option from me and I am going to feel obliged to come up with some answers.

The second conclusion I have reached about processes such as the one in which we are participating is that the more I participate in and study international discussions of education generally and teacher education specifically, the more I become concerned with any seminar or symposium in non-western locations that approaches the dialogue from a developed-developing perspective. That is, despite my first observation above, I have increasing difficulty with any symposium that invites me as someone from a so-called developed state to provide the answers to local educational dilemmas. Your country paper supports my view that national development and educational development should be viewed as unique events, shaped more by your history than western precedents. However, this does not mean that I am at all reticent to share with you my experiences and my viewpoint and opinions. Quite the opposite as you will soon learn. It does mean that I will be doing it in what I hope will be the best sense of a dialectic and with the intent that you will be able to filter my views and 'answers' through your reality and that these views will indeed help you find your own answers.

My presentation is divided into two parts. The first attempts to put any current discussion of teacher education in context. In a second section I attempt to apply the 'contexts' outlined in the first section to the questions on teacher education posed by the country paper.

The educational system in industrialized nations has come under close examination in recent years.

In the polls, in the media, and then quickly followed by the politicians, education has been receiving its fair share of public scrutiny. In the past decade in North America, there have been several major commissions and studies into education and a subsequent series of public prescriptions for revitalizing an educational system that some sectors of the public believe to be in a state of disorder.

Many of these commissions stemmed from a series of studies in the late 60's and early 70's that examined the relationship between student academic outcomes and schooling inputs and suggested that school level variables did not significantly affect achievement outcomes. Studies like those by Coleman (1966) and Jencks (1972) were just two of a larger number of studies that supported the notion that out of school factors were more important than school related factors in determining student achievement.

However, more recent and methodologically different research has challenged the notion that within school variables are not important. Many of these studies purport to show quite conclusively that what goes on inside schools does make a difference in student achievement and the researchers are not reticent in prescribing school level strategies to increase student productivity.

Teacher educators everywhere are finding themselves in the middle of this ongoing debate about teacher, teaching and school effectiveness. They are increasingly finding themselves fighting for scarce system-wide dollars, having to defend at a macro level the choice of teacher education as an investment choice, while at the same time having to prove to their school system clients that the teacher education process is effective in providing teachers who will make a difference in school productivity.

The purpose of this paper is to examine this context in which teacher educators in developing areas must plan and develop teacher education programs. There is a large number of issues that teacher educators in developing areas must grapple with. These include among others, a shortage of qualified teacher education candidates, a lack of institutional capacity, a system with teacher needs that usually outstrip capacity, a shortage of resources and a shortage of professionals prepared to be teacher educators. The environment or context for decision making are of considerable importance, especially in developing settings. Five particular environments or contexts relevant to decision making about teacher education in developing areas have been chosen for the current discussion. Implications for decision making in teacher education are suggested.

THE CONTEXT OF TEACHER EDUCATION IN DEVELOPING AREAS

(1) The Context of Reform: Current Perspectives in Teacher Education

In North America, teacher education has become the major focus of the public's search for both the source of and the solutions for the problems besetting the educational system. For instance, in the U.S., reports like the Carnegie Forum's and the Our Nation at Risk report and books by authors such asSizer (1984) and Goodlad (1984), have singled out the teacher education process for special attention and remediation. Specific reports have responded to the challenge to reform teacher education and have provided a number of prescriptions for change (see, for example, The Holmes Group, 1986). In Canada, although there does not appear to be the same urgency to reform, there have also been both commissioned and scholarly analysis of the teacher education process (see, for example, Fullan and Connelly, 1987; Wideen and Holbourn 1986). Criticism of the teacher education process is not new. James Koerner's (Koerner, 1954) message in his 50's book "The Miseducation of American Teachers" is repeated in much of the reform literature today. However some aspects of the current reform literature are different and require special mention regarding the purposes of the present paper.

For instance, the more current reform literature applies the school outcomes research to both criticize teacher education and to suggest directions for reform. For instance, as recently as 1983 (Joyce, Hirsh and McKibben, 1983, there have been research results that question the impact of teacher qualifications (teacher education) on student learning. The more recent and different effectiveness literature counteracts this to a certain degree, but raises other issues as to what teachers should be taught in order to be more 'effective'. At any rate, perhaps more than ever before, there now appears to be a research base on teaching and learning that provides considerable of advice to teacher education policy makers.

Furthermore, in the current debate on teacher education reform there is a growing demarcation of theoretical positions or stances regarding the appropriate approach to teacher education. Grimmett (1988), for instance, suggests three current perspectives on teacher preparation: (i) a focus on the developing of technical proficiency in beginning teachers (eg. Fuller, 1969), (ii) the intellectual pedagogy approach (eg. The Holmes Group, 1986), and (iii) the developmental constructivist point of view. Without going into the various models in great detail, the major distinction between the three approaches appears to be the place of propositional or theoretical knowledge in education.

It is evident, that the teacher education process in industrialized nations is under considerable scrutiny and controversy. But more importantly, for the purposes of this paper, the current aspects the reform movement have implications for teacher education in developing settings. For example, evidence regarding the impact of teacher education upon educational productivity takes on extra significance in locations that must make careful investment decisions about scarce educational dollars. Furthermore, the centre of the current debate regarding the source and timing of presentation of theoretical and propositional knowledge in education may appear to be a relatively non-urgent and academic debate in industrialized nations. However, in developing settings where much of the theoretical knowledge is non-indigenous, likely extracted and researched in different settings or cultures, then the issue of source of theoretical knowledge and timing of presentation take on heightened significance.

(2) The Financial Context: Obtaining Resources for Teacher Education

Two aspects of the ongoing school quality and effectiveness debate are relevant for the consideration of the resources provided for teacher education in developing settings.

The first aspect is the consideration of education as a national investment. Perhaps as a result of some of the earlier educational outcome studies, many developing nation planning agencies began to question by the mid-seventies the value of increased spending on education. Many of these poorer countries were spending a disproportionate amount of their national budgets on education. Furthermore, educational aid agencies provided support for education development projects on the assumption that a more educated public would result in increased economic productivity and social change. Many of the expectations in this regard appear not to have been met (Psacharopoulos and Woodhall, 1985:15). In fact, from a most cynical perspective it could be suggested that "educational expansion, as we know it, does not necessarily make either people or countries more prosperous; instead it may and does leave the former without jobs and the latter with increasingly burdensome claims on public funds." (Weiler, 1986:4). Most optimistic are the claims of education as a prime agent for social change, equalization of opportunity and even revolution. Whatever the point of view, consistent in all current discussions about the relationship between education and development is a growing awareness that education is but one investment choice from a number of other choices that might promote national development. The early education productivity studies have tarnished education's reputation as one of these investments. Those seeking scarce public funds for education are having to provide better proof that the investment will work.

The second aspect is the consideration of resource allocation within the education sector itself. Having won a hard fight to have scarce public dollars allocated to education, educational policy makers must decide amongst a series of investment decisions at both a macro and a micro level. At the macro level, researchers have still not been able to agree on whether money is better invested in primary, elementary, secondary or tertiary education. Developed countries solve this dilemma by spending a fortune in all areas. In developing areas more careful decisions must be made, based upon the type of national development pursued. At the micro (school, classroom) level, the recent school effectiveness and instructional technology research purports to provide some of the answers to school productivity, suggesting that given specific cognitive outcome goals, some school activities are clearly regarded as better than others.

In the midst of all of this, teacher educators everywhere are fighting for their share of a shrinking or stabilized resource base for education. The concerns for efficiency and effectiveness in teacher education are exacerbated in developing countries. In many developing countries, a significantly larger percentage of the recurrent cost of schooling is allocated to teachers' salaries and, increasing teacher qualifications could be seen as an important way to improve both the educational system and even the economic prosperity of a nation. However, some studies (World Bank, 1974; Nolan, 1975; Simmons & Alexander, 1980) have thrown doubt on the importance of teacher training and qualifications (and teachers in general) for educational outcomes in developing countries. They put into question any increased resource allocation in this area, and in general any effort to raise the qualifications of teachers in developing countries. Other studies (Dove, 1986:196) reassessing the evidence on teacher effects on pupil achievement in developing countries have concluded otherwise and have suggested that teacher training makes a difference to attitudes, professional relationships and pupil achievement.

Most researchers (Dove, 1985; Wheeler, 1986) who have considered the input/output research have observed that home backgrounds appear more relatively important to pupil achievement in industrialized countries while school and teacher related factors are more important in developing countries. Dove (1985) suggested that this may be due to the incongruence between the home and school culture in developed nations. At any rate, the question of the relationship between teacher training, increased teacher effectiveness and national development, appears far from resolved and appears to be a more critical issue in developing settings than may be the case in more industrialized locations.

(3) The Context of Supply and Demand: The Quality/Quantity Crisis in Teacher Education

In Canada we are in the process of coming out of a 20 year period of an oversupply of teachers. In my home province of Ontario as recent as 3 years ago only 30% of our 4500 teacher graduates would obtain employment. This was the case even though the 10 Faculties in the province had gradually reduced their output from 15,000 to 4,500 over a 15 year period. In the context of an oversupply of teachers and, quite surprisingly, an over demand for places within the Faculties of Education (we currently have about 4 qualified applicants for each place in our Faculty) it has been easy to discuss teacher education reform. The situation is rapidly changing as a dramatic shortage of qualified teachers is fast approaching (Smith, 1988). We find ourselves in the ironic position of having a major report on the reform of teacher education (Fullan, 1988) and a major report on teacher supply and demand (Smith, 1988) both being released by the government at the same time. The former recommends significant qualitative changes in teacher education, all requiring additional resources both in time and money. The latter points out the massive increased output required over the next few years by these same Faculties who are, on the other hand, being urged to engage in qualitative program changes.

While the irony of the situation may be lost on many teacher educators in North America, this is far from a novel situation for teacher educators in developing areas. Rapidly expanding educational systems have made teacher shortages chronic. The combined effect of a dramatic shortage of qualified candidates for training as teachers and a restricted institutional capacity to train these teachers has made the reform movement in teacher education such as that discussed in North America largely irrelevant to teacher educators in many developing settings.

The supply and demand of teachers is a crucial context for planners of teacher education programs in developing areas.

(4) A Conceptual Context: Teacher Growth as a Conceptual Basis for Teacher Education

It has only been in recent years that we have extended to adults the notion of development and growth that we have applied with enthusiasm and rigor to children. As notions of child development theories have led many investigations into teaching and learning, so the modern educator now pays heed to the views that personal and professional development is ongoing through adult life and that the degree of development affects adult behavior and learning.

Specifically, regarding educators, there is considerable research to suggest that teachers function at different levels of growth on a number of dimensions, and researchers have been able to demonstrate that teachers at different development levels will exhibit different behavioral characteristics. Generally, teachers operating at a higher level of growth or development appear to be more flexible, empathetic, have a greater ability to cope, greater tolerance for stress and perhaps most importantly, are able to engage in more complex teaching behaviours than those operating at lower levels of growth. Their area of growth are relevant for the current discussion.

The Skills and Tasks of Teaching. We have come a considerable distance from the time when we searched for and made lists of desirable teacher traits and their relationship to student achievement. Most current researchers in instructional technology now focus on the actual behaviors and practices of classroom teachers and the relationships to student achievement. Clearly, for teacher educators, if we can identify the things that teachers do (beyond skill lists) that affect instruction, then we are getting closer to the desired knowledge base of a teacher education program.

Skill or task growth schemes have been developed on the basis of a number of assumptions. The first is that there is a vision of a teacher or educator as a higher order problem solver. One metaphor is the teacher (administrator) as a researcher or a hypothesis maker who is continually assessing the impact of instructional decision making on the learner. The second, is the assumption that there is some hierarchical ordering of identifiable behaviors from a lower (but acceptable) level to a higher (maximum effectiveness) level. Finally, there is the assumption that the teacher can grow to acquire the qualities necessary to achieve a higher order of sophistication of the tasks of teaching.

The Reflective Practitioner. A second approach to the image of the teacher as a higher order problem solver takes into consideration the notion of reflection. While most task lists of teacher growth are generated from research that describes what (good) teachers do, Schön (1983) would argue that to truly understand the profession, we must reject the view that the results of research govern professional practice through the process of simply applying the researched teaching tasks. Through an overreliance on the "technical rationality" mode of inquiry we have not paid sufficient heed to the uncertainty, complexity, instability, and uniqueness of decision making in the professional (teaching) situations. Schön (Schön, 1983, 1987) provides powerful arguments for reconceptualization of the knowledge base of the professions. There is, he suggests, a form of "knowledge in action" ... and irreducible element of art in professional practice ... If the art is not invariant, known, and teachable, it appears nonetheless, at least for some individuals, to be learnable (Schön, 1983, 18).

Schön's discussion of the source of useful professional knowledge is especially important for any place that is considering the use of non-indigenous based teaching and teacher training practices. The growth schemes may provide a task inventory but the assumptions of Schön's notion of knowledge and practice might provide the key as to how to use the task inventories to guide in teacher education in developing settings.

Psychological Development of Teachers: There has been growing interest over the past few years in the application of theories of psychological growth and development to teacher development. For instance, Sprinthall and Thies-Sprinthall (1982) have pointed out that the traditional skills approach to teaching adults has little lasting effect and tends to "wash out -- from six to twelve months later". They proposed the notion of psychological development theory as a better basis for "directing constructs for teacher education".

Of particular relevance to the present discussion is the evidence that teachers (and other professionals) measured at higher levels of psychological development on a number of dimensions (ego, moral, epistemological) function more competently, possess a wider repertoire of behavioral skills, engage in more complex behaviors, perceive problems more readily and respond more accurately and empathetically to the needs of others.

In summary, although simple observation might suggest that teachers operate at different levels, intellectually, practically, and attitudinally, the research on teacher growth provides evidence that the level of teacher growth does affect behavior in the classroom and that teachers who "grow" become "better" teachers, taking into consideration both various notions of growth and several concepts of better. In addition, it is appropriate that growth can occur in an ordered fashion and that it can be stimulated with appropriate intervention strategy.

In general, however, the clearest implication of considering a growth model for teachers is that the teacher education process should be viewed as a very long continuum, beginning at some point prior to the taking of pre-service training and continuing throughout the teacher's career.

The importance of a growth conception for teacher education in developing areas will be discussed in a later section of this paper.

(5) A Philosophical Context: The Relationship Between Education and National Development

An important context that teacher educators in developing areas must consider is the relationship between education and national development. There is a plethora of theories that purport to explain the causes of and the cures for national development. There are economic theories, welfare theories, evolutionary theories, neo-Marxist theories, modernization theories, psychological theories, deficiency theories, dependency theories, and so on. However, pervasive throughout the literature is a dichotomy between what could be called a "dominant" view of what development is and how it takes place and what is termed a "liberation" view of development is and how it takes place (Marshall, 1980). There are many points of difference between these two views of development, but the core difference is that the former would suggest that there are deficiencies (economic, social and cultural) in third world locations that can be remedied by the transfer or intervention of western (developed nations) strategies. The latter would see national development as a more complex process whereby individuals reflect on their own condition, their environment and their history to enable them to act in improving their own developing condition. Liberation writers use the term "praxis" or the ability to reflect and act on that reflection as a key condition to national development. The term development and the term 'emancipation' become synonymous.

It is not the intent of the current paper to examine development theories in any great detail, however, some observations can be made in the context of teacher education in developing areas. First, the notion of praxis as a higher order or more mature view of national development is consistent with the 'practice to reflection to practice' notion explicit in the earlier discussions of teacher growth. Attitudinal growth may be as important as intellectual and behavioral growth. Second, in the developing context, the growth of a personal view relating education to national development may be a necessary condition for pedagogical growth. There is no possibility, for instance, that Schön's notion of the reflective teacher is consistent with a teacher or a system that uncritically adopts and accepts the transfer of western based educational practices. On the other hand, the behaviorally and cognitively mature person will perhaps be the one who will best have the ability to apply to fullest advantage the best that the more industrialized nations have to offer. This might suggest, for instance, that the total and unfettered rejection of western based theories and practices although it represents a higher level of teacher growth than the unfettered acceptance, may itself be a lower level than 'intelligent' or 'reflective' application of these theories across cultures. Attitudinal growth regarding development issues may be a particularly salient concept for consideration of the development of teacher education models in developing settings.

(6) The Organizational Context: A View of the Teaching Profession

A second example of attitude growth relates to the development of a view of the teacher as a professional. All of the notions of teacher growth imply a view of teaching that goes beyond a 'technical function'. The further a teacher grows beyond the 'technical function' the more both the individual and the profession become more identified with the requirements of a profession. As will be discussed in a subsequent section of this paper, the development and growth of 'professionalism' in teaching is a requirement not only to promote the types of growth discussed in this paper, but to address the dilemma of attracting qualified and desirable candidates to the teacher education process.

In my own setting I would have to admit that the excessive demand for places within our training program has much more to do with the substantial increases made in Canada over the past 20 years in teacher professionalism than with the nature of the experience we provide them once they are in the program.

Attitudinal growth regarding the concept (self concept) of the teacher as a professional is very salient in the context of a shortage of qualified teachers. However, for many developing settings, the 'organizational context' mitigates against a view of the teacher as a professional. Many educational systems are centralized with very little of the decision making developed to the level of the classroom teacher. It is not uncommon for teachers to be part of the civil service where promotion is seniority based. Colonial legacies in the area of educational administration, promote a formal hierarchy in schools based upon position. These and other organizational or political issues affect the view of the teacher as a professional. This view in turn affects the planning of programs in teacher education in developing areas.

Increasing the Quantity of Qualified Teachers:

The situation in most growing nations is well documented. In nations like Mauritius who have only recently adopted the policies of equal access and universal education, it is natural that the demands for qualified teachers will outstrip the supply. Indeed, even in stable growth nations teacher supply and demand appears to move in a cyclical pattern. For instance, in Ontario, Canada we have had an excess of teachers over the past 20 years and we are now moving into a 20 year shortage situation. Although the Mauritius country paper doesn't provide statistics I presume there is a shortage of teachers on Mauritius and there are a significant number of untrained teachers. However, regardless of the reasons for teacher shortages in either developed or developing settings, the issue centres around a consideration of (i) selection or entrance to the profession or training period and (ii) institutional capacity to train the required numbers.

Selection to the Profession: Linkages between cognitive development and higher order behaviors would suggest that in selecting students for teaching programs it would be appropriate to examine measures of cognitive maturity. Unfortunately, although there are various tests of cognitive maturity, none appear as of yet sufficiently reliable to use as a professional screening device. Similarly, the research on student selection for pre-service programs in education does not provide much support for extensive use of interviewing or experience profiles. By and large, academic average or some measure of scholarly success appears to be the major way of selecting individuals to the teaching profession in North America (Applegate, 1987). In one regard this poses a dilemma, since there is considerable research (Shalock, 1979) suggesting that scholastic achievement/grades is not related to future success in life or in teaching. Sprinthall & Thies-Sprinthall (1982) argued that it is the psychological maturity of the candidate, not their grade that is important.

However, grades may not be the relevant issue. Although there may be a relationship between more education and the qualities of allocentrism, and flexibility, integrity, and so on that are identified by most of the growth theories as desirable in higher order qualities and behaviors, there does not appear to be any research to suggest that higher grades in that experience make a significant difference in that growth. Consequently, what may be more relevant is not the performance on the pre-education degree or educational experiences, but the nature of that pre-education academic experience.

This issue has particular relevance for educational policymakers in developing societies. Where scarce educational dollars are searching for a greatest return on investment, some econometric data (World Bank, 1974) suggests that higher education for teachers may be an inefficient investment. Indeed to develop and

maintain a teaching body functioning at the lowest levels of complexity of practice then this indeed could be the case and, in fact, this may be a satisfactory goal for some developing educational systems. In the discussions of the various growth models, however, it should be clear that teacher growth to higher and more complex performance levels requires higher levels of cognitive development. Similarly, to have a teacher workforce that supports the view of national development through praxis and liberation requires a teacher workforce with appropriately high levels of cognitive maturity.

This appears to pose a tremendous dilemma to teacher education institutions in developing settings and certainly support the maintenance of high academic entrance standards to the teacher training process. However, decision making in this regard is constrained by several unfortunate assumptions.

The first is that teacher training remains in most locations a discrete activity that occurs at a certain time in one's life, and once completed has prepared a person for a lifetime of teaching. Indeed if we were to constrain ourselves with this view then we should define 'qualified' candidates at the highest academic level. But this is a false and damaging assumption. An essential premise of the growth models discussed in this paper is that teachers must grow to increase effectiveness and are quite capable of this growth. Quite simply, I see nothing wrong with selecting candidates for the teacher education process who are not academically qualified as long as a mind set and a structure is in place to ensure a lifetime continuum of growth as discussed in the previous section of this paper. In real terms, find the level of education required to obtain the needed number of teachers, admit persons with these qualifications and begin the teacher education process.

A second assumption is the relationship between subject matter expertise and teaching expertise. There are those who would suggest the need for subject level mastery prior to teacher training and I do not have much argument with this premise. However, there are two corollaries to this view that are dysfunctional. The first is that the 'subject' focus must pervade all grade levels. The lower levels (ages 6-9 for instance) require a focus on the individual, not the student and a teachers pre-occupation with subject can be inappropriate. The second is the apparent prevailing view in many developing settings that the training of secondary teachers is a priority. I categorically reject that assumption and suggest that scarce teacher training resources should be directed at those prepared to work at the lower primary level, regardless of their academic background.

A third assumption concerns the role of teacher professionalism in the teacher education or development process. Candidates are not flocking to the profession in most developing settings. It is difficult to imagine why they should. The pay is poor, the

conditions miserable and although in some countries the notion of teacher has some status, teachers (especially elementary level) in developing settings are not accorded a high professional status. This results in both a lack of interest in the profession as a whole and a low self concept in those that enter the profession. This is not the case in Ontario. I have 5 fully qualified (completed university degree with at least a B average) applicants for every place in the elementary training program in my Faculty. Good students are making a conscious decision to choose teaching over law, medicine and other professions. The major reason for this is that teaching has been raised to a high level of professionalism through the gradual increasing of the extrinsic rewards including pay and benefits. Elementary and secondary teachers require the same level of training and receive the same pay. Twenty five years ago this was not the case and all of our university graduates (mostly male) taught at the secondary level while those with high school (O levels) diplomas taught at the elementary level (mostly female). The inappropriateness of this dichotomy was evident and has been corrected to the point where we would now recognize that it is the Grade 1 to Grade 3 teacher that needs the most education and training and qualifications.

Teachers' salaries, working conditions, etc. can go a long way to alleviating this concern and has certainly had such an effect in North America. However, I believe equally important as the 'extrinsic' issues are those relating to teacher growth. Selecting "poorly qualified" candidates for the teacher education process does not impinge upon the professionalism of teachers. Imbibing a professional attitude that reflects lifelong professional growth does affect the professionalism of teaching. Recent research (Marshall, 1985) on the reasons that teachers choose teaching as a career supports the notion that the opportunity to participate in lifelong professional development is a major factor in their decision making.

In summary regarding the application of teacher growth models to the issue of a shortage of teachers, I have expressed the view that the extrinsic 'qualifications' of teacher candidates is far less important than the teacher education process they enter into. Given the appropriate process and concomitant attitude that is reflective of growth, then the national teacher education program should set as an entry 'qualification' the level as is required to get the candidates needed to meet the system demands for teachers. I have also suggested that Mauritius work towards increasing the professionalism of teaching, in particular at the elementary level. This can be done primarily by increasing extrinsic rewards and equalizing the rewards and requirements for teaching at all levels.

Having increased the pool of qualified and willing candidates, planners must also provide the institutional capacity and structure appropriate to teacher education.

Increasing Institutional Capacity: In Ontario we are currently faced with the awkward dilemma of a huge demand both for positions within the training program and for the products of the program. This places considerable pressure on the institutions to react by developing alternate routes to teacher certification. The issue in Mauritius may be slightly different in that the pool of academically qualified candidates may not be as high, but the issue of increasing institutional capacity is evident.

The most salient issue is perhaps a consideration of the alternate ways in which teacher education can be delivered and still maintain a high level of quality. Many countries have tried various delivery models including things like distance delivery through electronic media and multi-media packages. I personally have worked with such distance delivery formats and I am quite excited about their potential.

However, from my experiences and training as an instructional designer, I have learned that one chooses the purpose and objectives of the instructional task and then chooses the appropriate delivery mode. My concern in the present discussion is with teacher growth and this "instructional purpose" suggests some specific strategies to promote teacher growth both intellectually and behaviorally. Glassbert and Oja (1981) developed a curriculum for teachers based upon development in both the affective (cognitive and attitude) and behavioral (knowledge and skills) growth areas. In a field testing of a program to increase the development of a group of teachers on these objectives, they concluded that adults tend to stabilize at a particular stage of development and avoid significant change, making it difficult to create the dissonance producing experiences or reflective experiences necessary to facilitate cognitive growth. Generally the strategies used to create the "dissonance producing experiences" should involve some real (versus simulated) role taking experiences (Floden & Feiman, 1981); the activity should be personalized; the activity should occur over an extended period of time and allow for introspection and reflection (Denton & Seymour, 1977).

The important point to consider when considering teacher education programs is that intellectual and behavioral growth can occur serendipitously, but is best achieved through the careful designing of planned intervention strategies. Each of the growth areas (skills, intellectual, attitude) suggest appropriate and different delivery modes. My fear (often justified) is that the distance delivery structure makes the decision about delivery mode and concomitantly defines the limits of growth. If your teacher education exists as a series of lectures and exams, then increasing the instructional capacity is easy. Tape the lectures, send them throughout the island(s) and administer annual exams. If your teacher education process is more than information transmission and includes modelling, discussion and analysis, then combinations of media are necessary.

At my Faculty, we have dramatically increased our institutional capacity at the in-service level by "de-institutionalizing" our program. We offer over 100 courses, with over 100 instructors in 35 locations to over 1800 teachers who may never have seen our building. Although some electronic media are used we have chosen to use exceptional local teachers as adjunct Faculty. We guarantee that wherever 8 or more teachers can get together we will provide an instructor for on-site delivery. Our field instructors are organized into teams headed by a full time Faculty member who is responsible for the course content, instructor in-service and course evaluation. The details of this off-campus program go beyond the scope of this paper. My point is that as long as the concept of growth are kept in the forefront, then the 'institutionalization' of the program is not relevant. I am not opposed to distance delivery approaches. Quite the opposite. I am opposed, however, to any structural adjustments to teacher education that ameliorate the quality of the current program and more specifically address in a limited way the initial or continued growth of teachers. For instance, in my Faculty we have decided that we can deliver courses in a distance mode, but not programs. That is, it is not possible to address all aspects of desired teacher growth through distance delivery modes. Only an examination of the purposes and content of your existing teacher education programs would provide the answers to your concerns in this regard.

The issue of institutional capacity is also affected by the availability and quality of the people who deliver teacher education programs. I cannot think of a teacher education program that has not experienced some difficulty in staffing teacher education institutions. The situation is the combined effect of requiring high academic qualifications and successful experience even when a person is hired with both of these qualities, there is a tendency for the latter to 'wash out' over a number of years. Many places are realizing that it may not be possible to have a teacher education staff that can address all aspects of the type of growth required and are implementing both unique programs and staffing to address this concern.

In general, my experience and observations regarding the dilemma of institutional capacity is to suggest that rather than look for ways of increasing the delivery capacity of pre-service programs, ways should be examined to increase the delivery capacity of inservice and continuing education to meet all teacher growth needs. Given a strong (required) continuing education function for teachers, it would not give me undo concern to see us solve the pre-service 'bottleneck' by abandoning pre-service education in favor of a continuing education or an induction to certificate programs.

SUMMARY AND CONCLUSIONS: QUALITY AND GROWTH IN TEACHER EDUCATION IN MAURITIUS

Questions to be Answered

Mauritian teacher educators are the only ones who can really answer the questions posed in the country paper. The rest of us as outsiders can really only do two things. The first is provide or broaden the context in which Mauritian policy makers will make their decisions. I have tried to do this by providing a discussion of the contexts of education, teacher education, education and teacher education in developing situations and teacher growth. The second thing we can do is share what we do in our settings and provide you with insights into our success and our mistakes. As a way of concluding my discussion of these issues I would like to return to the actual questions posed in the country paper and do something no self-respecting scholar should attempt -- give some brief answers. Having done that I will reserve my concluding statements for a note of caution on why policy makers in Mauritius and other non-western settings should carefully scrutinize my conclusions. First, however, are answers to the questions posed in the country paper regarding teacher education.

- (i) Teacher education, curriculum development and the M.I.E.: Why is curriculum development not a tertiary sector activity?

I can see considerable benefit in MIE 'scholars' providing both teacher education and curriculum leadership. It would take a unique structure to satisfy the needs of both the school system and higher education, however, conceptually this supports my concept of a teacher education institution that blends service to the school system and scholarship. These activities are largely separate in my country and a good portion of our time is spent trying how to develop better relations between the Faculties and the field.

- (ii) Should the tertiary system include university course work in the humanities etc.?

Absolutely. My notion of a 'growing' teacher includes intellectual/cognitive development. Higher education in its most liberal sense is a preparation for employment. Teachers should be required to take course work in these areas, over the span of their careers. University course work may not be the only environment for cognitive development, but it is the only formal one available to our teachers at the present time. Unless teachers 'grow' in a cognitive sense there is not likely to be behavioral or attitudinal growth.

- (iii) Should the University meet the demand for training courses?
Whether or not these are handled by the tertiary system depends on the training area. I do believe, however, that the process should be managed by the government to ensure orderly development and co-ordination. In addition, Mauritius should critically examine the use of outside (other country) courses (see conclusion to this paper). Despite these cautions I believe that MIE should provide or direct 'training' initiatives for teachers. My Faculty's experience in this regard may be of interest.
- (iv) Are distance learning systems cost effective in a small country?
Instructional media properly used is instructionally and cost effective. However, preparation and establishment of distance delivery programs is probably marginally useful in a place like Mauritius and perhaps cost prohibitive. A better strategy may be to develop a distance delivery centre that will allow you to tap electronically in to the distance delivery courses proliferating throughout the world. However, I do have reservations about the unfiltered diffusion of courses from one country (culture) to another. Regarding teacher education specifically mediated distance delivery strategies can only partially meet the needs of growth in all dimensions.
- (v) Should research have practical relevance?
I do not believe that a country like Mauritius should be embarking upon programs of basic research in teacher education. Apart from the fact that I have serious doubts about the nature of basic research in education, the research role of the MIE should be in tandem with its curriculum development and teacher education role. There are obviously a large number of issues in education in Mauritius requiring applied research and these areas should receive priority.

- (vi) What kind of structure is best for teacher education?
It appears to me you have in place an 'induction' program that would be the envy of most western countries. Add a compulsory full time pre-service to the front of this and a compulsory "re-certification" requirement to the other end and, at least structurally you would have an envious operation. A secondary issue here is whether teacher education should be placed within the University setting. As a Dean and as a teacher education scholar I would support any activity that increases the academic credibility of the teacher education activity. However, I believe that it is a grave error to assume that attaching teacher education to a University setting will somehow enhance the academic credibility of teacher education. On the other hand, in my opinion attaching teacher education to the Universities has had some deleterious effects on the process. My advise is to leave teacher education as an autonomous institution with strong links to the curriculum operation.
- (vii) Should primary and secondary teachers be treated differently?
Other than the recognition that there are minor curriculum differences in the teacher education program for primary and secondary, the two should be treated exactly the same. That is, the same entry requirements, the same length of training, the same type (in-service and pre-service) of training should be required for both. There are some lessons not worth learning from the West. One that is worth emulating has been the work of the past 20 years in the removing of the distinction between secondary and primary teachers.
- (vii) What are the implications for training arrangements if primary and secondary become 'equal'?
There would clearly be a dramatic increase needed in institutional capacity. However, experiences in other locations suggests that this can be done gradually and that external assistance can be of great value. For instance, my Faculty is now working (C.I.D.A. funded) with a small island in the Caribbean to help them establish long term in-service strategies while at the same time in-servicing new primary teachers.

There are, of course, other very important questions raised in the discussion paper. I haven't answered all, but I have probably gone far enough to encourage at least some debate on teacher education. However, before leaving you, I would like to return to my introduction where I mentioned briefly a view of my role in participating in your symposium and my discomfort with the developing-developed label and dichotomy. Specifically, I have concerns about the relationship between my experience in teacher education and your needs.

Some Cautions to Suggest:

A recurring dilemma for teacher educators in developing areas has been how to address the issue of the relevancy of western based educational practices. (Marshall, 1983; Marshall, 1984; Anderson, 1985). Should students in teacher training institutions be taught pedagogy and practices and skills that have not been developed in their own cultures? Traditionally, researchers and writers in this area focussed on the utility of applying a particular concept or skill across cultures. For example, the question could be asked whether Piaget's stages of development occur in children in all cultures or if cognitive styles are consistent across cultures. If our only view of teacher education is one of a teacher learning skills and applying them, then this relevancy analysis is something we should lead our future teachers through. At the extreme, perhaps we should provide the teachers in developing settings with extensive training in pedagogical skills that were researched in other cultures. If, however, we accept the notion of growth to higher levels of intellectual and practical performance then the teacher is not simply transferring and applying a pedagogical skill, but is 'reflecting in action' or processing a knowledge of the skill through their experience, through trial and error and through intuition. This suggests that a purpose of teacher education in a place like Mauritius is certainly not to teach in an unexamined way pedagogical skills and practices of other cultures. But more than that, it is crucial to provide an environment for reflection on these practices in light of the experiences and intuitions engendered in their own culture. Similarly, cross-cultural researchers might consider focussing not on the issue of whether a particular educational practice works in a non-indigenous culture, but how teachers process their knowledge of these skills into their own situation or culture.

This situation poses a dilemma to all teacher educators everywhere but proposes a special dilemma to third world educators due to the largely non-indigenous nature of the research on teaching tasks and skills. I'm not sure that I have a way out of this dilemma in my own setting; however, I do believe that it is crucial for teachers in training (for all teachers for that matter) to have access to the opportunity to critically reflect and analyze the teaching act in their contexts. In terms of this paper, the structure you develop must

provide the opportunity for teachers to reflect on the relationship between education and development (to grow attitudinally) and interact on this reflection (praxis).

I conclude, then, with a restatement of my view that symposiums like this where teacher educators from different settings can share their knowledge and experiences represent the hope for a better world. I have yet to go to one of these where I do not I go home taking more with me than I brought. I hope that you will accept my observations in the true spirit of sharing and dialectic.

My compliments once again to the organizers of this symposium and my thanks for having the opportunity to participate.

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